

Summary of 1991 Groundwater Tracing Study

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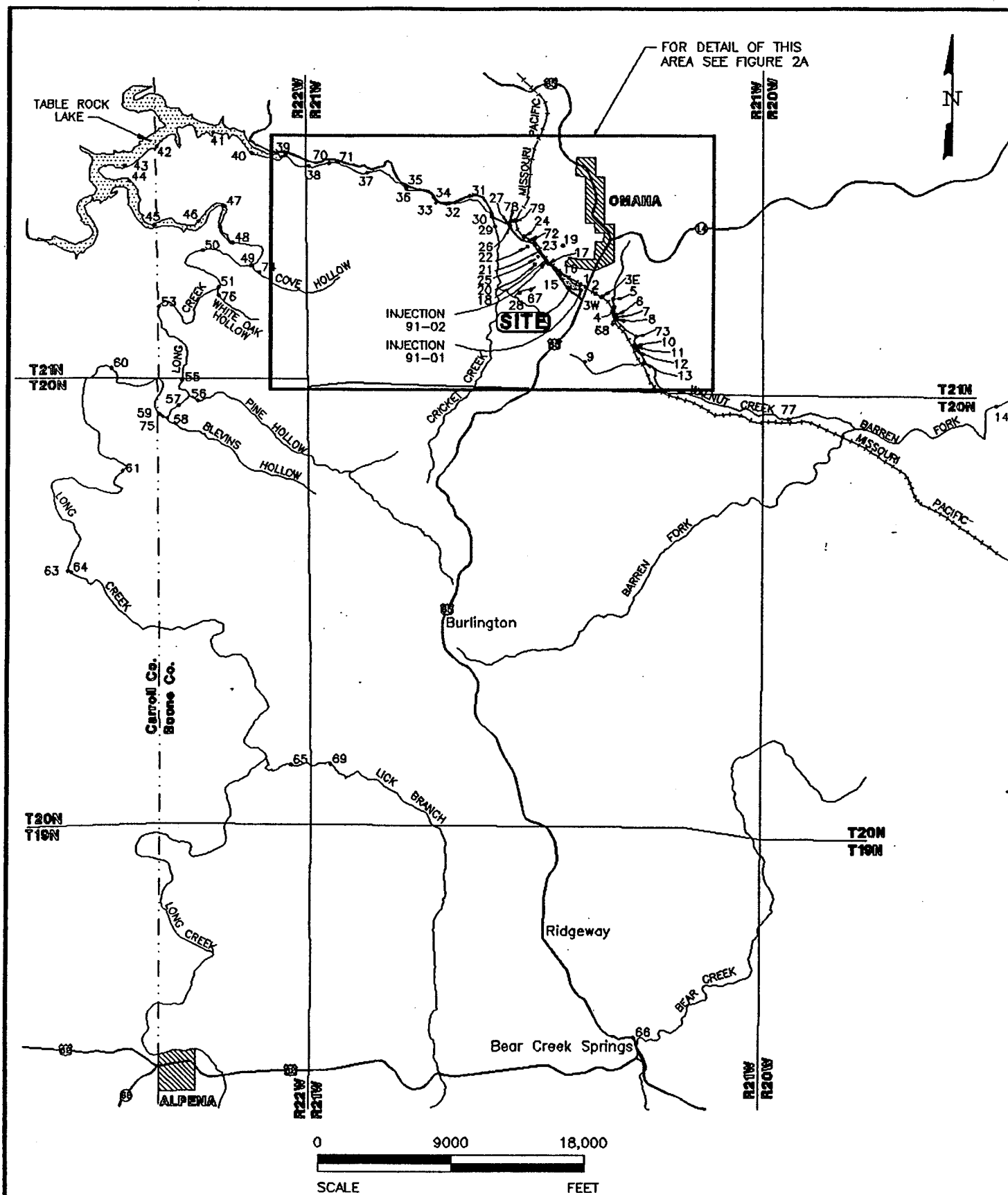
Design Features

- ❖ Woodchip Pile Trace (Trace 91-01) introduced February 21, 1991 in a 40-foot long stretch of a losing stream segment at the southeast edge of the site. Flushed with 21,600 gallons of hauled water discharged at average rate of 95 gpm.
- ❖ New Cricket Spring Trace (Trace 91-02) introduced March 14, 1991 in spring branch with flow of about 15 gpm
- ❖ Each trace used 10 pounds fluorescein dye mixture (75% dye equivalent) and 28.5 pounds rhodamine WT mixture (20% dye equivalent).
- ❖ Dye introduction points designed to bracket the site.
- ❖ Established 79 sampling stations (see maps).
- ❖ Continuous sampling with carbon samplers occurred until April 22 to April 24, 1991. Grab samples of water collected during each site visit, analyzed if dye detected in associated carbon samplers.
- ❖ Analysis with spectrofluorophotometer operated under a synchronous scan protocol.
- ❖ Reporting limits 3x detection limit; they were as follows:

Dye Mixture	Matrix	Reporting Limit ppb
Fluorescein	Elutant	0.045
Rhodamine WT	Elutant	0.705
Fluorescein	Water	0.006
Rhodamine WT	Water	0.045

Results

- ❖ Dyes from Woodchip Pile Trace detected at 12 stations within the railroad tunnel and along Walnut Creek. The most distant groundwater station where dye was detected was Beaver Dam Spring, 17,200 feet from introduction point.
- ❖ Dyes from New Cricket Spring Trace detected at 14 sampling stations within or near the channels of New Cricket Spring Branch and Cricket Creek. The most distant station where dyed groundwater was detected was in the channel of Cricket Creek 16,250 feet from the injection point.
- ❖ First dye arrival at sampling stations within a few days of dye introduction.
- ❖ By the end of the sampling period dye concentrations at sampling stations had routinely declined by two orders of magnitude from peak concentrations.
- ❖ A groundwater divide exists between the two dye introduction points.



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FIGURE 2
GROUND WATER TRACING STUDY
SAMPLING LOCATIONS
 Arkwood, Inc. Site
 Omaha, Arkansas

DATE 09/05/91

W.O.NO. 9213A094191

